



January 9, 2004

TO: Eric Kuhn, Board of Directors, CRWCD

FROM: Dave Kanzer

SUBJECT: *North Fork of the Gunnison River Water Supply Study Update*

1. Future Projects Study Update

The River District staff through the Enterprise continues to work cooperatively with the local North Fork and Grand Mesa water users and their appointed steering committee members to address long-term water supply issues. In the last year the we have been active and successful in forging two cooperative agreements and have completed three studies.

These include:

1. A site-specific probable maximum precipitation (PMP) study of the Overland Reservoir Drainage Basin by American Weather Associates;
2. A dam reconnaissance study for the North Fork sub-basin, by Western Engineers; and
3. An engineering feasibility study of rehabilitating Last Chance Reservoir on the Grand Mesa by Buckhorn Geotech.

These studies are described briefly below:

- A. **Site-specific probable maximum precipitation (PMP) study of the Overland Reservoir:** Although this study has been completed and the results are encouraging, there is still significant effort required before more water may be legally stored in the Overland Reservoir. This includes finalizing the accompanying report on the probable maximum flood (PMF) that would result from the PMP; and the getting acceptance from the state of Colorado. This will require a peer review of the study. It is anticipated that these efforts will be completed in 2004.

- B. **Dam reconnaissance study for the North Fork Basin:** Ten dam sites were evaluated for both economic and engineering pre-feasibility in the North Fork Basin. These included six new potential reservoir sites and four existing locations for potential reservoir expansion. Preliminary results indicate a broad range of potential costs to develop new water in the basin, from a low of \$1300 per acre foot for a 33 KAF on-channel facility (Electric Mountain Reservoir) to a prohibitively high \$55,000 per acre foot for a small facility on a tributary stream (Middle Creek). Although this study indicates that there may be some feasible opportunities to develop new sources of water, economic justification may still be lacking. That is, unless the existing supplies become unavailable (e.g., Paonia Reservoir). See item #2 below.
- C. **Engineering feasibility study of rehabilitating Last Chance Reservoir in the Grand Mesa:** Buckhorn Geotech of Montrose has completed a feasibility study which indicates that although the rehabilitation of Last Chance Reservoir, a 30 acre-foot facility, is physically feasible, the cost associated with its rehabilitation is most likely prohibitive. Due to this lack of viability, no additional work is planned at this time.

2. Paonia Sediment Survey

After some extended technical difficulties related to the bathymetric survey of reservoir basin, the USBR has recently concluded that sedimentation into Paonia Reservoir has slowed somewhat in recent years. However, the study found that the sedimentation rate is still significant (106 acre feet of new sediment get deposited every year on average). If this rate remains constant and is extrapolated into the future, the reservoir's active capacity could be cut in half in approximately 55 years. The following graph illustrates how the active capacity has decreased since the reservoir's construction in 1962.

As the long-term viability of Paonia Reservoir decreases, the pressure on the North Fork Water Conservancy District to develop new or replacement water sources increases.

Active Capacity of Paonia Reservoir vs Time and Sedimentation

